WASHINGTON STATE DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE
4601 NORTH MONROE
SPOKANE, WASHINGTON 99205-1295

FINAL STATEMENT OF BASIS
FOR
AIR OPERATING PERMIT NUMBER 02AQER-4553, 2nd Revision
WASHINGTON STATE UNIVERSITY
PULLMAN, WASHINGTON

TABLE OF CONTENTS

LIST OF ABBREVIATIONS ---- **3**

Potential to Emit (PTE) by emission unit ---- **4**

1. Introduction ---- **4**

2. Facility Identifying Information ---- **4**

3. Basis for Title V Applicability ---- **4**

4. Attainment Classification ---- **5**

5. Title V Facility Timeline ---- **5**

6. Facility Description ---- **5**

7. Significant Facility Emission Units/Processes ---- **6**

8. Insignificant Emission Units and Activities ---- **6**

8.1 Insignificant Emission Unit Categories ---- 6

8.2 Categorically Insignificant Emission Units ---- 6

8.3 Insignificant Emission Units based on Size or Production Rate ---- 8

8.4 Proposed Insignificant Emission Units Not Found to be Insignificant ---- 9

9. Comments and Corresponding Responses ---- **9**

10. Requirements Determinations/Explanations ---- **9**

10.1 Initial or one-time requirements ---- 9

10.2 Requirements clarifying miscellaneous issues with regard to the specific emission unit while not constituting any ongoing applicable requirements ---- 12

11. MRRR Sufficiency Explanations ---- **13**

12. Streamlining Explanations ---- **16**

13. Clarifications and Interpretations ---- **18**

14. Appendix A – University Map ---- **22**

LIST OF ABBREVIATIONS

AOP	Air Operating Permit
ASIL	Acceptable Source Impact Level
BACT	Best Available Control Technology
BTU	British Thermal Units
°C	Degrees Celsius
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COMS	Continuous Opacity Monitoring System
dscf/m	Dry Standard Cubic Foot per minute
Ecology	Washington State Department of Ecology
E.I.T.	Engineer in Training
EPA	United States Environmental Protection Agency
°F	Degrees Fahrenheit
FCAA	Federal Clean Air Act
ft^3	Cubic foot
gr/dscf	Grain per dry standard cubic foot
HMIWI	Hospital-Medical-Infectious Waste Incinerator
hr	Hour
MMBTU	Million British Thermal Units
MRRR	Monitoring, Recordkeeping, and Reporting Requirement
MVAC	Motor Vehicle Air Conditioner
N_2	Nitrogen gas
NOC	Notice of Construction
NO_x	Oxides of Nitrogen
NSPS	New Source Performance Standard
O_2	Oxygen
O&M	Operation & Maintenance
P.E.	Professional Engineer
PM	Particulate Matter
PM-10	Particulate Matter with aerodynamic diameter ≤ 10 micrometers
ppm	Parts per million
QIP	Quality Improvement Plan
PSD	Prevention of Significant Deterioration
RACT	Reasonably Available Control Technology
RCW	Revised Code of Washington
RICE	Reciprocating Internal Combustion Engine
RM	EPA Reference Method from 40 CFR Part 60, Appendix A
scfm	Standard Cubic Feet per Minute
SIP	State Implementation Plan
SO_2	Sulfur Dioxide
T	Temperature
TAP	Toxic Air Pollutant
TPY	Tons Per Year
TSP	Total Suspended Particulate
VOC	Volatile Organic Compound
WAC	Washington Administrative Code
yr	Year

Emission Unit Identification

This section has been included to clarify the identification of boilers and RICE's operated by the permittee as referenced throughout this SOB as well as the associated AOP.

Emission Unit	Identifier Used in AOP & SOB	To Be Decommissioned?
Existing Boiler #1	"College Avenue Steam Plant Boiler #1"	NO
Existing Boiler #2	"College Avenue Steam Plant Boiler #2"	NO
Existing Boiler #3	"College Avenue Steam Plant Boiler #3"	YES
Existing Boiler #4	"College Avenue Steam Plant Boiler #4"	YES
Existing Boiler #5	"College Avenue Steam Plant Boiler #5"	YES
Existing Boiler #6	"College Avenue Steam Plant Boiler #6"	YES
Existing Boiler #7	"College Avenue Steam Plant Boiler #7"	YES
Existing Boiler #8	"College Avenue Steam Plant Boiler #8"	YES
New Energy Plant Boiler #1	"Grimes Way Steam Plant Boiler #3"	N/A
New Energy Plant Boiler #2	"Grimes Way Steam Plant Boiler #4"	N/A
New Energy Plant Boiler #3	"Grimes Way Steam Plant Boiler #5"	N/A
New Energy Plant RICE #1 (1100)	"Grimes Way Steam Plant RICE #1"	N/A
New Energy Plant RICE #2 (1100)	"Grimes Way Steam Plant RICE #2"	N/A
New Energy Plant RICE #3 (1750)	"Grimes Way Steam Plant RICE #3"	N/A

Selected Emission Units – Annual Potential To Emit in Tons Per Year (tpy)[1]

Emission Units	PM-10 (typ)	CO (tpy)	NO_X (tpy)	SO_2 (tpy)	VOC (tpy)
College Avenue Steam Plant Boiler #8 – Coal Fired	(334.35)* 35.36	38.58	360.07	671.28	0.13
College Avenue Steam Plant Boiler #6 – Natural Gas Firing Scenario	4.08	44.90	147.83	0.32	2.96
College Avenue Steam Plant Boiler #6 – Fuel Oil Firing Scenario	78.84	18.07	171.37	1144.28	4.65
College Avenue Steam Plant Boiler #7 – Natural Gas Fired	4.89	53.87	177.39	0.39	3.55
College Avenue Steam Plant Boilers #1 and #2 – Natural Gas Fired	3.84	19.05	12.36	0.30	2.57
Grimes Way Steam Plant Boilers #3, #4, and #5 Combined – Natural Gas and Distillate Fired	19.74	44.34	55.09	25.12	7.01
Grimes Way Steam Plant RICE #1 and #2 Combined	2.02	4.10	19.86	0.15	0.85

[1] Annual potential to emit (pte) values for selected pollutants as reported in the findings section of Order No. 03AQER-5744 for emission units located at the Grimes Way Steam Plant, and as part of the AOP Renewal Application submitted by the permittee on February 1, 2002 for all other emission units.

Emission Units	PM-10 (typ)	CO (tpy)	NO_X (tpy)	SO_2 (tpy)	VOC (tpy)
Grimes Way Steam Plant RICE #3	0.65	0.65	21.54	0.43	0.08
Grimes Way Steam Plant Total (boilers + RICE's)	22.41	49.09	96.49	25.70	7.94
Medical, Pathological, Low Level Radioactive Waste Incinerator (Incinerator)	0.43	0.85	1.03	0.01	0.04
Animal Feed Preparation Plant	7.62	0.37	0.44	0.03	0.02
Agronomy Seed Processing Plant	0.53	--	--	--	0.47

* Indicates pre-controlled emissions from source to which Compliance Assurance Monitoring is applicable as reported in AOP Renewal Application submitted to Ecology on February 1, 2002.

1.0 Introduction

This document sets forth the legal and factual basis for the permit conditions in a FINAL 2nd Revision to the AOP issued by the State of Washington Department of Ecology for a public university located in Pullman, Washington. This document is called a "statement of basis" and is required by Washington State regulations [Chapter 173-401 WAC]. A statement of basis does not contain enforceable permit conditions. Enforceable permit conditions are contained in the AOP itself.

2.0 Facility Identifying Information

2.1 Company Name ---------- Washington State University

2.2 Facility Name ---------- Pullman, Washington Campus

2.3 Unified Business Identification Number ---------- 91-6001108

2.4 Facility Address ---------- Pullman, Washington 99164

2.5 Responsible Official ---------- Greg Royer, Vice President for Business Affairs

Mailing Address ---------- P.O. Box 641045 Pullman, Washington 99164-1045

2.6 Facility Contact ----------Gene Patterson, Environmental Health and Safety

2.7 Facility Contact Phone Number ---------- (509) 335-3041

3.0 Basis for Title V Applicability

Washington State University, Pullman campus, is subject to Title V, Air Operating Permit Regulations, due to the emission of, or the potential to emit in excess of 100 tons per year of the following regulated pollutants; particulate matter with aerodynamic diameter less than 10 microns (PM-10), carbon monoxide (CO), oxides of nitrogen (NO_X), and sulfur dioxide (SO_2). WAC 173-401-200(17)(b) identifies any source that directly emits or has the potential to emit one hundred tpy or more of any air pollutant as a major source. Major sources are required to obtain Title V permits under 173-401-300(1)(a)(i).

4.0 Attainment Classification

The facility is located in an area that is classified as attainment for all criteria pollutants as of January 2004.

5.0 Title V Facility Timeline

5.1 December 8, 1994 ---------- Source became subject to Title V AOP Program

5.2 December 2, 1996 ---------- Original Title V AOP is issued (Order No. DE96AQ-E139)

5.3 December 2, 2001 ---------- Order No. DE96AQ-E139 expired

5.4 July 25, 2002 ---------- Final Renewal Permit Issued (Order No. 02AQER-4553)

5.5 August 1, 2002 ---------- Order No. 02AQER-4553 Effective Date

5.6 March 5, 2003 ---------- Final Order No. 02AQER-4553 1st Revision Issued

5.7 September 12, 2003 ------ NOC Order No. 03AQER-5744 Issued for the Grimes Way Steam Plant

5.8 October 28, 2003 ---------- WSU Notified by Ecology of Future AOP Re-opening

5.9 February 19, 2004 ---------- Draft Order 02AQER-4553 2nd Revision Issued

5.10 February 25, 2004 ---------- Public Comment Period Begins

5.11 March 25, 2004 ---------- Public Comment Period Ends

5.12 April 23, 2004 ---------- EPA Review Period Begins

5.13 June 7, 2004 ---------- EPA Review Period Ends

5.14 June 9, 2004 ---------- Final Order No. 02AQER-4553 2nd Revision Issued

5.15 August 1, 2007 ---------- Order No. 02AQER-4553 2nd Revision Expiration Date

6.0 Facility Description and General Information

6.1 General Campus Description – Washington State University (WSU), located in Pullman, Washington, is a comprehensive institution of higher learning. The major activity on campus occurs during the school year from August through May. The present population of the Pullman campus is approximately 17,000 students. The summer campus population is approximately 30 percent of the school year population. The WSU Pullman campus incorporates approximately 1800 acres containing 120 building groups totaling over 400 major and minor buildings. The campus supports over 50 miles of roads with associated parking lots. Building ages vary from new to almost 100 years old. Roads vary from modern four lane equipped with traffic lights to a few unpaved sections in little used areas of the campus. The WSU campus encompasses resident and commuting student and faculty facilities, many research and teaching facilities, laboratories, a veterinary hospital, medical research, animal research and facilities, agricultural research and facilities, farm land, grain and seed storage and mixing facilities, and a composting facility. The campus is mostly heated by steam from the existing power plant, which operates coal, gas, and fuel oil fired boilers. Recently, WSU has begun construction of a new energy plant located at the southeast corner of the Grimes Way and Olympia Avenue intersection known as the Grimes Way Steam Plant. The new plant will include three (3) natural gas/diesel fuel fired boilers, two (2) natural gas fired RICE generators, and one (1) diesel fuel fired RICE generator. When fully operational, the new energy plant will replace coal fired boilers #3, #4, #5, and #8 as well as natural gas/diesel fuel fired boilers #6 and #7 at the existing College Avenue Steam Plant. The Grimes Way Steam Plant will be operated in coordination with boilers #1 and #2 at the existing College Avenue Steam Plant to meet campus steam needs. Buildings beyond the steam system are heated by small localized natural gas fired furnaces and boilers. Buildings with food preparation, laboratory demonstration, or experimental facilities are equipped with exhaust hoods to remove any offensive odors and gases from the buildings. The campus operates a medical waste incinerator (also treats low-level radioactive waste and pathological waste) to destroy

medical waste generated by various research laboratories, veterinary hospital, and animal holding areas.

6.2 Washington State Department of Health Radioactive Air Emissions License – As required by WAC 246-247-060(1)(e) the radioactive air emissions license as issued by the Department of Health must be incorporated into the Air Operating Permit. The Department of Health license has been issued to WSU and has been incorporated as Section 5 of the AOP associated with this SOB. The license covers radioactive air emissions from multiple facilities on campus as specified by the license.

7.0 Significant Facility Emission Units/Processes

7.1 Facility Wide (Section 2.1 in AOP)

7.2 College Avenue Steam Plant Boiler #8 – Coal Fired (Section 2.2 in AOP)

7.3 College Avenue Steam Plant Boiler #6 – Natural Gas or Fuel Oil Fired (Section 2.3 in AOP)

7.4 College Avenue Steam Plant Boiler #7 – Natural Gas Fired (Section 2.4 in AOP)

7.5 College Avenue Steam Plant Boilers 3,4, and 5 – Coal Fired (Section 2.5 in AOP)

7.6 College Avenue Steam Plant Boilers #1 and #2 – Natural Gas Fired, formerly boilers #9 and #10 (Section 2.6 in AOP)

7.7 College Avenue Steam Plant Coal and Ash Handling (Section 2.7 in AOP)

7.8 Grimes Way Steam Plant (Section 2.8 in AOP)

7.9 Medical, Pathological, and Low-level Radioactive Waste Incinerator (Section 2.9 in AOP)

7.10 Ethylene Oxide (ETO) Sterilizer – Bustad Hall, ETO-1 (Section 2.10 in AOP)

7.11 Ethylene Oxide (ETO) Sterilizer – Veterinary Teaching Hospital, ETO-2 (Section 2.11 in AOP)

7.12 Animal Feed Preparation Plant (Section 2.12 in AOP)

7.13 Agronomy Seed Processing Plant (Section 2.13 in AOP)

7.14 Compost Facility (Section 2.14 in AOP)

8.0 Insignificant Emission Units and Activities

8.1 The following insignificant emission unit categories were proposed by the permittee in the Title V Renewal Application materials submitted to Ecology and have been found to meet the requirements outlined in WAC 173-401-530.

8.1.1 WAC 173-401-530(1)(d) – *Emission unit or activity generates only fugitive emissions*. The permittee has unpaved roads and parking lots. Designation of an emission unit or activity as insignificant for purposes of the chapter does not exempt the unit or activity from any applicable requirement.

8.1.2 WAC 173-401-530(1)(a) and WAC 173-401-531 – *Actual emissions of all regulated air pollutants from a unit or activity are less than the emissions thresholds.* The permittee has established (via recordkeeping of products and amount used) that the actual emissions from both the Housing and McCluskey paint booths have been below the significance levels in the recent past. However, in order to continue to establish these emission units as insignificant, the permittee must continue to maintain records of products and amounts used. This data will be submitted to Ecology as emission inventory data. Similar data must also be submitted related to

the operation of the paint booth recently installed in the Johnson Annex. This booth is expected to qualify as an insignificant emission unit based on actual emissions.

8.2 The following insignificant emission unit categories were proposed by the permittee in the Title V Renewal Application materials submitted to Ecology and have been found to meet the requirements outlined in WAC 173-401-532 as categorically insignificant.

8.2.1 Lubricating oil storage tanks (WAC 173-401-532(3))

8.2.2 Storage tanks, reservoirs and pumping and handling equipment of any size, limited to soaps, lubricants, hydraulic fluid, vegetable oil, grease, animal fat, aqueous salt solutions or other materials and processes using appropriate lids and covers where there is no generation of objectionable odor or airborne particulate matter (WAC 173-401-532(4))

8.2.3 Pressurized storage of oxygen, nitrogen, carbon dioxide, air, or inert gases (WAC 173-401-532(5))

8.2.4 Storage of solid material, dust-free handling (WAC 173-401-532(6))

8.2.5 Vehicle exhaust from auto maintenance and repair shops (WAC 173-401-532(7))

8.2.6 Vents from rooms, buildings and enclosures that contain permitted emissions units or activities from which local ventilation, controls and separate exhaust are provided (WAC 173-401-532(9))

8.2.7 Internal combustion engines for propelling or powering a vehicle (WAC 173-401-532(10))

8.2.8 Brazing, soldering and welding equipment and oxygen-hydrogen cutting torches for use in cutting metal where in components of the metal do not generate HAPs or HAPs precursors (WAC 173-401-532(12))

8.2.9 Metal melting and molten metal holding equipment and operations wherein the components of the metal do not generate HAPs or HAP precursors. Electric arc furnaces are not considered for listing as insignificant (WAC 173-401-532(21))

8.2.10 Plant upkeep including routine housekeeping, preparation for and painting of structures or equipment, re-tarring roofs, applying insulation to buildings in accordance with applicable environmental and health and safety requirements and paving or stripping parking lots (WAC 173-401-532(33))

8.2.11 Cleaning and sweeping of streets and paved surfaces (WAC 173-401-532(35))

8.2.12 Steam cleaning operations (WAC 173-401-532(39))

8.2.13 Portable drums and totes (WAC 173-401-532(42))

8.2.14 Lawn and landscaping activities (WAC 173-401-532(43))

8.2.15 General vehicle maintenance including vehicle exhaust from repair facilities (WAC 173-401-532(45))

8.2.16 Comfort air conditioning or air cooling systems, not used to remove air contaminants from specific equipment (WAC 173-401-532(46))

8.2.17 Natural draft hoods, natural draft stacks, or natural draft ventilators for sanitary and storm drains, safety valves, and storage tanks subject to size and service limitations expressed elsewhere in this section (WAC 173-401-532(47))

8.2.18 Natural and forced air vents and stacks for bathroom/toilet facilities (WAC 173-401-532(48))

8.2.19 Office activities (WAC 173-401-532(49))

8.2.20 Personal care activities (WAC 173-401-532(50))

8.2.21 Fire fighting and similar safety equipment and equipment used to train fire fighters excluding fire drill pits (WAC 173-401-532(52))

8.2.22 Materials and equipment used by, and activity related to operation of infirmary; infirmary is not the source's business activity (WAC 173-401-532(53))

8.2.23 Fuel and exhaust emissions from vehicles in parking lots (WAC 173-401-532(54))

8.2.24 Structural changes not having air contaminant emissions (WAC 173-401-532(67))

8.2.25 Photographic process equipment by which an image is reproduced upon material sensitized to radiant energy, e.g., blueprint activity, photocopiers, mimeograph, telefax, photographic developing, and microfiche (WAC 173-401-532(70))

8.2.26 Repair and maintenance activities, not involving installation of an emission unit and not increasing potential emissions of a regulated air pollutant (WAC 173-401-532(74))

8.2.27 Batteries and battery charging (WAC 173-401-532(77))

8.2.28 Solid waste (as defined in the Washington Administrative Code) containers (WAC 173-401-532(79))

8.2.29 Totally enclosed conveyors (WAC 173-401-532(86))

8.2.30 Steam vents and safety relief valves (WAC 173-401-532(87))

8.2.31 Air compressors, pneumatically operated equipment, systems and hand tools (WAC 173-401-532(88))

8.2.32 Steam leaks (WAC 173-401-532(89))

8.2.33 Process water and white water storage tanks (WAC 173-401-532(94))

8.2.34 Demineralizer tanks (WAC 173-401-532(95))

8.2.35 Clean condensate tanks (WAC 173-401-532(96))

8.2.36 Chipping (WAC 173-401-532(112))

8.2.37 Debarking (WAC 173-401-532(113))

8.2.38 Pond dredging (WAC 173-401-532(116))

8.2.39 Non-PCB oil filled circuit breakers, oil filled transformers and other equipment that is analogous to, but not considered to be, a tank (WAC 173-401-532(118))

8.2.40 Electric or steam-heated drying ovens and autoclaves (WAC 173-401-532(119))

8.2.41 Sewer manholes, junction boxes, sumps and lift stations associated with wastewater treatment systems (WAC 173-401-532(120))

8.3 The following insignificant emission units were proposed by the permittee in the Title V Renewal Application materials submitted to Ecology and have been found by Ecology to meet the requirements outlined in WAC 173-401-533 as insignificant on the basis of size or production rate.

8.3.1 WAC 173-401-533(2)(f) – *Combustion sources less than 5 hundred thousand BTU/hr heat input using any commercial fuel containing less than 0.4% by weight of sulfur for coal and less than 1% by weight sulfur for other fuels.* The permittee has seventeen (17) emergency generators that fall under this category.

8.3.2 WAC 173-401-533(2)(e) – *Combustion sources less than 5 million BTU/hr heat input using exclusively natural gas, butane, propane and/or LPG.* The permittee has approximately thirteen (13) low pressure boilers, two hundred thirteen (213) hot water heaters, one hundred thirty-three (133) furnaces, two (2) outdoor fine arts kilns or furnaces, and one (1) fine arts welder.

8.3.3 WAC 173-401-530(1)(a) – *Actual emissions of all regulated air pollutants from a unit or activity are less than the emission thresholds established in WAC 173-401-530(4).* The permittee proposed that since actual emissions from the McCluskey and Housing paint booths have been below the threshold levels in the past, both paint booths be designated as insignificant. Ecology has determined that the permittee must continue to maintain paint usage records in order to establish that the emissions from the paint booths continue to be below the threshold levels.

8.4 The following insignificant emission units were proposed by the permittee in the Title V Renewal Application materials submitted to Ecology and have not been found by Ecology to meet the requirements outlined in WAC 173-401-533 as insignificant on the basis of size or production rate.

8.4.1 WAC 173-401-533(3)(c) – *Chemical or physical analytical laboratory operations or equipment including fume hoods and vacuum pumps.* The permittee has approximately seven hundred seventy-nine (779) fume hoods, and twenty-five (25) vacuum pumps. Due to the sheer number of the hoods and vacuum pumps, Ecology has determined that case-by-case determination will require significant time and effort. Ecology will re-open and amend the AOP as necessary pending the results of further evaluation.

9.0 Comments and Corresponding Responses

9.1 Comments received during public comment periods and EPA review periods for the original issuance as well as revisions are on file at Ecology's Eastern Region Office in Spokane, along with Ecology's response to the comments.

10.0 Requirements Determinations/Explanations

10.1 Initial or one-time requirements that have not been included in the AOP as ongoing applicable requirements.

10.1.1 40 CFR 60.54c(a), (c), Siting requirements for new HMIWI's. An analysis of the impacts of the facility shall be performed to consider various impacts on a site specific basis.

10.1.1.1 Extensive analysis was performed with regard to the construction of the new incinerator, including the Environmental Impact Statement process. Records documenting the processes can be found in the WSU Incinerator files at the Ecology's Eastern Region Office.

10.1.2 40 CFR 60.56c(b), The owner or operator of affected HMIWI's shall conduct an initial performance test to determine compliance with the emission limits.

10.1.2.1 This testing occurred on November 16-18, 1999, and February 29 – March 2, 2000, and was conducted by Amtest Inc. A copy of the Emissions Test Report is located in the source test file at Ecology's Eastern Regional Office in Spokane, Washington. The permittee has notified Ecology that the emissions test report incorrectly stated that the testing occurred in December rather than the actual date in November.

10.1.3 Order No. DE 98AQ-E124, Approval Conditions 2.1, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, Within sixty (60) days of initial startup of the incinerator, the permittee shall conduct performance testing, and compliance with associated ASIL's shall be verified using modeling acceptable to Ecology.

10.1.3.1 This testing occurred on November 16-18, 1999, and February 29 – March 2, 2000, and was conducted by Amtest Inc. A copy of the Emissions Test Report is located in the source test file at Ecology's Eastern Regional Office in Spokane, Washington. The modeling was conducted by Kirk D. Winges and is located in the WSU Incinerator files at the above Ecology office.

10.1.4 40 CFR 60.56c(d)(1), Establishment of appropriate minimum and maximum values for the operating parameters included in Table 3 of subpart Ec following initial performance testing.

10.1.4.1 The appropriate minimum and maximum values for the operating parameters were established following the initial performance testing. The values established are located in the source test report file at Ecology's Eastern Region Office.

10.1.5 Order No. DE 98AQ-E124, Approval Conditions 4 – 4.7, Establishment of appropriate minimum and maximum values for the operating parameters included in Table 3 of subpart Ec following initial performance testing.

10.1.5.1 The appropriate minimum and maximum values for the operating parameters were established following the initial performance testing. The values established are located in the source test report file at Ecology's Eastern Region Office.

10.1.6 40 CFR 60.58c(a), Submittal of notifications regarding commencement of construction, intent to construct, anticipated date of construction commencement, siting documentation, the type of waste to be combusted, maximum design burning capacity, anticipated maximum charge rate and other related information.

10.1.6.1 Extensive correspondence occurred between Ecology and the permittee with regard to the construction of the new incinerator. Within this correspondence, the permittee provided the required information. Documentation can be found in the WSU Incinerator files at the Ecology's Eastern Region Office.

10.1.7 40 CFR 60.58c(c)(1), (2) and Order No. DE 98AQ-E124, Approval Condition 7.8, No later than 60 days following the initial performance testing of the incinerator, the permittee shall submit the initial performance test data as well as the values for the site specific operating parameters.

10.1.7.1 The initial performance test reports, as well as the appropriate minimum and maximum values for the operating parameters were received by Ecology on May 2, 2000. The testing occurred on December 16-18, 1999 and February

29-March 2, 2000. The reports are located in the WSU source test report file at Ecology's Eastern Region Office.

10.1.8 Order No. DE 98AQ-E124, Approval Conditions 7.2, 7.3, The permittee shall provide written notification to Ecology of the anticipated date of startup as well as the date of actual startup of the incinerator.

10.1.8.1 Notification stating the anticipated date of startup as August 9, 1999 was received by Ecology on July 16, 1999. This actual startup date was modified to August 2, 1999 in correspondence received by Ecology on July 21, 1999. This correspondence is located in the WSU incinerator files at Ecology's Eastern Region Office.

10.1.9 Order No. DE 98AQ-E124, Approval Condition 7.1, The permittee shall provide written notification to Ecology of the date construction on the incinerator commenced no later than thirty (30) calendar days after such date.

10.1.9.1 Based on the records of both Ecology and the permittee, this notification requirement of the cited Order was not met. However, it is clear from the substantial correspondence between Ecology and the permittee that clear lines of communication had been established, and Ecology was clearly aware that construction of the incinerator was underway.

10.1.10 40 CFR 60.58c(c)(3), No later than 60 days following the initial performance testing of the incinerator, the permittee shall submit the waste management plan.

10.1.10.1 The waste management plan was received by Ecology on May 12, 1999.

10.1.11 Order No. DE 98AQ-E124, Approval Condition 7.9, The permittee shall prepare and submit a waste management plan to Ecology.

10.1.11.1 The waste management plan was received by Ecology on May 12, 1999.

10.1.12 Order No. DE 98AQ-E124, Approval Conditions 6, 7.7, The permittee shall develop and submit to Ecology a site specific O&M manual for all equipment associated with the incinerator that has the potential to affect emissions to the atmosphere.

10.1.12.1 The O&M manual was developed and a copy received by Ecology on May 2, 2000. The manual is located in the WSU facility files at Ecology's Eastern Region Office.

10.1.13 40 CFR 60.58c(d), An initial annual report shall be submitted no later than one (1) year following submittal of the initial performance testing results, operating parameter minimum and maximum limits, and waste management plan.

10.1.13.1 The first annual report was received by Ecology on February 16, 2000.

10.1.14 40 CFR 60.58c(f), An initial semi-annual report shall be submitted no later than six (6) months following submittal of the initial performance testing results, operating parameter minimum and maximum limits, and waste management plan.

10.1.14.1 The first semi-annual report concerning the incinerator was received by Ecology on August 2, 1999.

10.1.15 Order No. DE 95AQ-E138, Approval Condition 5, O&M manual for the ethylene oxide sterilizer located in the Veterinary Teaching Hospital shall be submitted to Ecology for approval within sixty (60) days of initial startup of the equipment.

10.1.15.1 As part of a site visit/inspection performed by Ecology on November 13, 1999, the O&M manual was reviewed and subsequently approved by Ecology personnel.

10.1.16 Order No. DE 95AQ-E138, Approval Conditions 6.2 and 6.3, Testing for ethylene oxide emissions and system leaks from the ethylene oxide sterilizer shall be conducted within sixty (60) days of startup.

10.1.16.1 Initial testing of the ethylene oxide sterilizer occurred on November 13, 1996 (report dated December 2, 1996), and the test report was received by Ecology on December 16, 1996. The report is located in the Ethylene Oxide Sterilizer files at Ecology's Eastern Region Office.

10.1.17 Order No. DE 93AQ-E115, Approval Condition 1, Appropriate fuel contracts necessary for discontinuance of operation of coal fired boilers #3, #4, and #5 (located at the College Avenue Steam Plant) shall be established by the permittee by the beginning of the 1993 fall semester.

10.1.17.1 While no record specifically stating that the appropriate fuel contracts were established was found in Ecology's files, since the issuance of Order DE 93AQ-E115, coal fired boilers #3, #4, and #5 have only been operated under extreme conditions in accordance with the original AOP (Order No. DE96AQ-E139).

10.1.18 Order No. 01AQER-3336, Approval Conditions 5.1, 5.2, Notification of anticipated startup of the natural gas fired boilers #1 and #2 at the College Avenue Steam Plant shall be provided in writing to Ecology postmarked not more than sixty (60) calendar days or less than thirty (30) calendar days before such date.

10.1.18.1 Notification stating the date of startup as the week beginning December 17, 2001 was sent to Ecology by the permittee on December 17, 2001. This correspondence is located in the WSU Boilers 9 & 10 permit file at Ecology's Eastern Region Office.

10.1.19 Order No. 01AQER-3336, Approval Conditions 5.1, 5.3, and 40 CFR 60.7(a)(3), Notification of actual date of startup of the natural gas fired boilers #1 and #2 at the College Avenue Steam Plant shall be provided in writing to Ecology within fifteen (15) days of such date.

10.1.19.1 Notification stating the date of startup as the week beginning December 17, 2001 was sent to Ecology by the permittee on December 17, 2001. This correspondence is located in the WSU Boilers 9 & 10 permit file at Ecology's Eastern Region Office.

10.1.20 Order No. 01AQER-3336, Approval Conditions 5.1, 5.4, Notification regarding completion of the O&M manual for the boiler system (boilers #1 and 2 at the College Avenue Steam Plant) shall be submitted in writing to Ecology within thirty (30) days of initial startup of the boilers.

10.1.20.1 Notification documenting the completion of the O&M manuals for boilers #1 and #2 was received by Ecology on July 23, 2002. This correspondence is located in the permit file for Order No. 01AQER-3336 at Ecology's Eastern Regional Office in Spokane, Washington.

10.1.21 Order No. DE 95AQ-E148, Approval Condition 3, Within sixty (60) days of initial startup of the facility expansion, the O&M manual as developed for the Compost Facility shall be submitted to Ecology for approval.

10.1.21.1 The O&M manual was received by Ecology on August 7, 1995. This correspondence is located in the WSU Compost Facility permit file at Ecology's Eastern Region Office.

10.1.22 Order No. 03AQER-5744, Approval Condition 8.2, The order approving construction of the Grimes Way Steam Plant becomes void if construction is not commenced within eighteen (18) months of receipt of the final order.

10.1.22.1 While Ecology has not received specific correspondence citing the date that construction on the plant commenced, correspondence with the permittee throughout late 2003 clearly indicates that construction has commenced.

10.2 The following requirements clarified miscellaneous issues with regard to the applicable emission unit and were not, in actuality, approval conditions. These NOC conditions have not been included in the AOP as ongoing applicable requirements.

10.2.1 Order No. DE 95AQ-E138 Approval Condition 3, Interlocks.

10.2.1.1 This approval condition stated that no interlocks were required as part of this Order.

10.2.2 Order No. DE 95AQ-E138 Approval Condition 4, Emission Control Monitors.

10.2.2.1 This approval condition states that the emission equipment control monitors are listed in the technical information submitted with the NOC application.

10.2.3 Order No. DE 79-421 Approval Condition 3, Sulfur Dioxide Emissions.

10.2.3.1 This approval condition states that total annual sulfur dioxide emissions will be determined by USEPA Region X in Seattle, Washington.

10.2.4 Order No. 03AQER-5744 Approval Condition 8.9, More Restrictive Limitation.

10.2.4.1 This approval condition clarifies that where multiple requirements in the referenced Order include conflicting limitations on emissions, the more restrictive emission limitation will apply.

11.0 Monitoring, Recordkeeping, and Reporting Requirement (MRRR) Sufficiency Explanations – The following section provides brief discussions regarding the reasoning behind the MRRR's included as part of the AOP. The criteria is that each MRRR must be sufficient to assure compliance with the associated condition, emission standard or work practice.

11.1 MRRR **1M** – No specific monitoring can reasonably be required for these requirements. The nature of the requirements makes it necessary to rely on the good faith of the permittee to conscientiously monitor site operations and to promptly report any deviations.

11.2 MRRR **2M** – This monitoring is used for conditions that require the source to maintain a certain status quo (e.g., O&M manual accessible to employees in operation of the equipment; maintaining replacement parts for routine repairs to monitoring equipment). To assure compliance with these provisions, the permittee is simply required to check that there has been no change in the status quo. Since such a change is unlikely, an annual inspection was deemed adequate.

11.3 MRRR **3M** – This MRRR was designed to provide sufficient response to complaints regarding facility emissions affecting the landowners neighboring or in the affected vicinity of the facility. Timeframes were chosen to provide the permittee with adequate time to respond appropriately as well as ensuring that complaints not go unnoticed.

11.4 MRRR **4M** – A monthly visible emission observation is considered to be sufficient monitoring for general process units with regard to the opacity standard. The specifics of the monitoring described have been designed to provide relatively frequent evaluation of each potential emission point, while requiring visible emission testing using EPA RM 9 only when visible emissions are observed. The monitoring was designed with the goal of providing the permittee with sufficient opportunity to respond to upsets appropriately while at the same time avoiding significant, prolonged environmental degradation. With regard to the use of visible emission evaluation surveys as a monitoring technique related to particulate matter standards, the method was chosen due to the fact that most of the general process units to which this is applicable are not large enough to justify performance testing using EPA RM's 5 and/or 202. Visible emission observations provide a convenient alternative method to source testing for the purpose of evaluating the performance of such units.

11.5 MRRR **5M** – The monitoring has been designed to require periodic reviews of Operation and Maintenance manuals, original Notice of Construction application materials, and other such documentation as appropriate in order to evaluate whether current operational practices are being conducted in a manner consistent with the information upon which permitting has been based. The recordkeeping and reporting required ensure that practices which are not consistent with the submitted information will addressed in a timely manner.

11.6 MRRR **6M** – The monitoring has been designed to require periodic walk-around surveys as the most simple and direct method to determine the presence of such emissions. These surveys, in conjunction with a good faith effort on the part of the permittee to operate in accordance with the conditions of the AOP, are considered sufficient monitoring.

11.7 MRRR **7M** – The monitoring as specified has been designed based on the condition that all associated equipment is maintained in proper working condition. Using emission factors in conjunction with operational parameters is a feasible method of estimating emissions from an emission unit for which performance testing may not be feasible. The monitoring was designed with the goal of providing the permittee with sufficient opportunity to respond to upsets appropriately while at the same time avoiding significant environmental degradation.

Additionally, the periodic requirement to report the necessary data provides assurance that the facility has continued to operate and that the applicable New Source Review Orders have not become discontinued.

11.8 MRRR **8M** – This monitoring has been specified to include the estimation of emissions based on the use of emission factors as described above. In addition, periodic source testing has been added to the monitoring due to the size of the emission unit and the increased importance of emissions of the corresponding pollutants in relation to emissions of other pollutants.

11.9 MRRR **9M** – This monitoring has been specified to apply generally to units subject to Compliance Assurance Monitoring (CAM). The monitoring is included specifically as required by 40 CFR 64.

11.10 MRRR **10M** – Because the MRRR enables direct comparison between records and the operational limits, it is considered to be sufficient. In addition, a Continuous Opacity Monitor provides real time opacity information as recorded by the equipment. The monitor must be

calibrated and maintained in accordance with the quality assurance procedures in order to ensure that the data produced is valid. Because of its nature, this type of monitoring is sufficient.

11.11 MRRR **11M** – Testing for sulfur content once per shipment of coal is considered to be a reasonable frequency. The recordkeeping and reporting required comply with title V minimum requirements.

11.12 MRRR **12M** – The monitoring described is specifically applicable to the coal fired boiler #8 at the College Avenue Steam Plant for the purposes of Compliance Assurance Monitoring (CAM). Compliance Assurance Monitoring must be designed to provide reasonable assurance of compliance with emission limitations or standards for the pollutant specific emission unit. In order for a pollutant specific emission unit (PSEU) to be subject to CAM, the three (3) conditions described below must be met. The manner in which they are met by the coal fired boiler is discussed below.

11.12.1 The PSEU must be subject to an emission limit for the applicable pollutant. In the case of boiler #8, the PSEU is subject to multiple emission limits specific to particulate matter. These applicable requirements are included in Section 2.2 of the AOP.

11.12.2 The PSEU must utilize air pollution control equipment to reduce emissions of the applicable pollutant to a level that meets the limits established by the emission limit(s). In the case of boiler #8, the particulate emissions of the PSEU are controlled by a reverse-air baghouse.

11.12.3 The PSEU must have pre-controlled emissions of the specific pollutant that meet or exceed the major source thresholds established in WAC 173-401-200(17). In the case of the coal fired boiler, the pre-controlled emissions of particulate matter have been calculated to be 334.35 tons per year (tpy). This exceeds the major source threshold of 100 tpy established in WAC 173-401-200(17).

The proposed CAM monitoring has been designed to rely on the differential pressure across the baghouse. The differential pressure is considered to be an effective indicator of baghouse particulate matter removal efficiency. This decision was made based on the fact that problems with baghouse efficiency involve damage to the bags or structure which makes leakage between the clean side and dirty side of the baghouse possible. Pressure drop over the baghouse will give an excellent indicator of the presence of any such leakage. The particular trigger limits were set based on data obtained during the most recent source test as well as engineering judgment and manufacturer's information.

11.13 MRRR **13M** – The conditions under which boilers 3, 4, or 5 at the College Avenue Steam Plant may be operated are included just as specified in the Administrative order and are considered to be adequate.

11.14 MRRR **14M** – This MRRR establishes the minimum testing requirements that must be satisfied for natural gas fired boilers #1 and 2 at the College Avenue Steam Plant in order to establish reasonable assurance of compliance with associated limits.

11.15 MRRR **15M** – This MRRR establishes the minimum monitoring, recordkeeping, and reporting information necessary for reasonable assurance of compliance with the appropriate requirements applicable to natural gas fired boilers #1 and 2 at the College Avenue Steam Plant.

11.16 MRRR **16M** – This MRRR establishes the minimum recordkeeping information necessary for reasonable assurance of compliance with the requirement to keep the O&M manual for boilers #1 and 2 at the College Avenue Steam Plant updated.

11.17 MRRR **17M** – This MRRR establishes the minimum monitoring, recordkeeping, and reporting information necessary for reasonable assurance of compliance with the appropriate requirements applicable to the emission units located at the Grimes Way Steam Plant.

11.18 MRRR **18M** – This MRRR establishes the minimum testing requirements that must be satisfied for the emission units at the Grimes Way Steam Plant in order to establish reasonable assurance of compliance with associated limits.

11.19 MRRR **19M** – This MRRR establishes the minimum recordkeeping information necessary for reasonable assurance of compliance with the requirement to keep the O&M manual for the emission units located at the Grimes Way Steam Plant updated.

11.20 MRRR **20M** – This MRRR establishes the minimum monitoring, recordkeeping, and reporting information necessary for reasonable assurance of compliance with the appropriate requirements applicable to the incinerator.

11.21 MRRR **21M** – This MRRR establishes the minimum guidelines governing the testing requirements that must be satisfied for the incinerator in order to establish reasonable assurance of compliance with associated limits. The guidelines are included specifically as required by 40 CFR 60 and the NOC permit.

11.22 MRRR **22M** – This MRRR establishes the minimum guidelines governing the testing requirements that must be satisfied for the incinerator in order to establish reasonable assurance of compliance with associated limits. The guidelines are included specifically as required by 40 CFR 60 and the NOC permit.

11.23 MRRR **23M** – This MRRR establishes the minimum guidelines governing the testing requirements that must be satisfied for the incinerator in order to establish reasonable assurance of compliance with associated limits. The guidelines are included specifically as required by 40 CFR 60 and the NOC permit.

11.24 MRRR **24M** – This MRRR establishes the minimum monitoring, recordkeeping, and reporting information necessary for reasonable assurance of compliance with the appropriate requirements applicable to the incinerator. The MRRR establishes the specific conditions which constitute a violation with regard to the incinerator operating parameters.

11.25 MRRR **25M** – This MRRR establishes the minimum recordkeeping information necessary for reasonable assurance of compliance with the requirement to keep the O&M manual for the incinerator updated.

11.26 MRRR **26M** – This MRRR establishes the minimum monitoring, recordkeeping, and reporting information necessary for reasonable assurance of compliance with the appropriate testing requirements applicable to the incinerator.

11.27 MRRR **27M** – This MRRR establishes the equipment and operating procedures required in order to for reasonable assurance of compliance with the appropriate requirements applicable to the incinerator.

11.28 MRRR **28M** – The testing and sampling as specified by the NOC permit uses accepted methods to sample and test for ethylene oxide (ETO). In addition, the frequency is considered to be sufficient to establish reasonable assurance of compliance with the appropriate requirements applicable to the ETO sterilizer.

11.29 MRRR **29M** – This MRRR establishes the minimum guidelines governing the testing requirements that must be satisfied for the ETO sterilizer in order to establish reasonable

assurance of compliance with associated limits. The guidelines are included specifically as required by the NOC permit.

11.30 MRRR **30M** – The calculational methods required will provide information which establishes reasonable assurance of compliance with the appropriate requirements applicable to the ETO sterilizer. In addition, direct comparison between records and the operational limits will be possible.

11.31 MRRR **31M** – Continuous temperature monitor provides real time temperature information as recorded by the equipment. The monitor must be calibrated and maintained in accordance with accepted quality assurance procedures in order to ensure that the data produced is valid. Because of its nature, this type of monitoring is sufficient.

11.32 MRRR **32M** – This MRRR establishes the minimum recordkeeping and reporting information necessary for reasonable assurance of compliance with the appropriate testing requirements applicable to the ETO sterilizer.

11.33 MRRR **33M** – This MRRR establishes the minimum recordkeeping information necessary for reasonable assurance of compliance with the requirement to keep the O&M manual for the ETO sterilizer updated.

11.34 MRRR **34M** – Due to past observations of significant opacity emissions by Ecology personnel, past documented visible emissions in excess of 20% opacity, and the fact that significant and frequent visible emission monitoring has never been required for the Seed Processing Plant, the monitoring as specified is required to provide reasonable assurance of compliance with the opacity and grain loading standards.

11.35 MRRR **35M** – The monitoring has been designed to require periodic walk-around surveys and subsequent visible emissions testing using RM 9 as necessary as the most simple and direct method to determine the presence of such emissions. These surveys, in conjunction with a good faith effort on the part of the permittee to operate in accordance with the conditions of the AOP, are considered sufficient monitoring.

11.36 MRRR **36M** – This MRRR establishes the minimum monitoring, recordkeeping, and reporting information necessary for reasonable assurance of compliance with the appropriate requirements applicable to the Compost Facility.

11.37 MRRR **37M** – This MRRR establishes the minimum recordkeeping information necessary for reasonable assurance of compliance with the requirement to keep the O&M manual for the Compost Facility updated.

12.0 Streamlining Explanations

12.1 40 CFR 60.52c(a) – Emissions of particulate matter from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of particulate matter to 0.03 grains per dry standard cubic foot corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.2) that limits particulate matter emissions from the incinerator to 0.030 grains per dry standard cubic foot corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly equally as stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.2 40 CFR 60.52c(a) – Emissions of carbon monoxide from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of carbon monoxide to 40 ppm

corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.3) that limits carbon monoxide emissions from the incinerator to 40 ppm corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly equally as stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.3 40 CFR 60.52c(a) – Emissions of dioxins/furans from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of dioxins/furans to 1.0 grains per billion dry standard cubic feet corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.4) that limits dioxin/furan emissions from the incinerator to 1.0 grains per billion dry standard cubic feet corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly equally as stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.4 40 CFR 60.52c(a) – Emissions of hydrogen chloride from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of hydrogen chloride to 15 ppm corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.5) that limits hydrogen chloride emissions from the incinerator to 10 ppm corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly more stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.5 40 CFR 60.52c(a) – Emissions of sulfur dioxide from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of sulfur dioxide to 55 ppm corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.6) that limits sulfur dioxide emissions from the incinerator to 20 ppm corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly more stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.6 40 CFR 60.52c(a) – Emissions of nitrogen oxides from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of nitrogen oxides to 250 ppm corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.7) that limits nitrogen oxides emissions from the incinerator to 250 ppm corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly equally as stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.7 40 CFR 60.52c(a) – Emissions of lead from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of lead to 0.52 grains per thousand dry standard cubic feet corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.8) that limits lead emissions from the incinerator to 0.520 grains per thousand dry standard cubic feet corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly equally as stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.8 40 CFR 60.52c(a) – Emissions of cadmium from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of cadmium to 0.07 grains per thousand dry standard cubic feet corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.9) that limits cadmium emissions from the incinerator to 0.020 grains per thousand dry standard cubic feet corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly more stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.9 40 CFR 60.52c(a) – Emissions of mercury from the incinerator – This section of the CFR applies to the WSU incinerator by limiting emissions of mercury to 0.24 grains per thousand dry standard cubic feet corrected to seven percent oxygen on a dry basis. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.10) that limits mercury emissions from the incinerator to 0.240 grains per thousand dry standard cubic feet corrected to seven percent oxygen on a dry basis. Since the condition included in the NOC order is clearly equally as stringent and is expressed in the same units as the requirement in §60.52c(a), it is appropriate to apply streamlining to this requirement.

12.10 40 CFR 60.52c(b) – Stack opacity from the incinerator – This section of the CFR applies to the WSU incinerator by limiting stack opacity to ten percent (10%) as averaged over six (6) minutes. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 3.1) that limits stack opacity to ten percent (10%) as averaged over six (6) minutes. Since the condition included in the NOC order is clearly equally as stringent and is expressed in the same units as the requirement in §60.52c(b), it is appropriate to apply streamlining to this requirement.

12.11 40 CFR 60.53c(a) – Presence of a trained operator during operation of the incinerator – This section of the CFR applies to the WSU incinerator by requiring that a fully trained an qualified operator is accessible, either at the facility or available within 1 hour. This applicable requirement has not been included in the AOP due to the fact that Order No. DE 98AQ-E124 includes a condition (Approval Condition 10.11) that requires that the incinerator not be operated by anyone other than a certified operator during all hours of operation. Since the condition included in the NOC order is clearly more stringent than the requirement in §60.53c(a), it is appropriate to apply streamlining to this requirement.

13.0 Clarifications and Interpretations

13.1 Section 1 - Standard Conditions – For permit conditions required by Washington State regulations that have been included in the SIP, two dates are given. The first date is the date for the regulation that was adopted into the SIP. The second date is for the most up-to-date version of the regulation. State-only enforceable permit conditions are identified with the symbol (S).

13.2 Recordkeeping retention time – Two of the NOC permits that apply to the permittee (Order No. DE 95AQ-E148 and Order No. DE 95AQ-E138) include conditions which require applicable recordkeeping/reporting to be maintained for a period of two years. Standard Condition 1.27.3 of the AOP requires that the permittee retain all records or information of this type for a period of at least five (5) years. Due to the fact that the five (5) year requirement included in the standard condition is more stringent, this is the requirement that has been included in the appropriate MRRR's. However, the conditions included in the NOC permits still apply to the permittee and therefore have been included in the AOP under the column labeled Condition,

Emission Standard, or Work Practice. The specific NOC conditions that this applies to are listed below.

13.2.1 Order No. DE 95AQ-E148 – Approval Condition(s) 1, and 3

13.2.2 Order No. DE 95AQ-E138 – Approval Condition(s) 1, and 5

13.3 WAC 173-401-620(1) – Acid Rain Provisions. The permittee currently is not an affected party as specified in the referenced section of the WAC. Due to this, no permit conditions relating to the acid rain provisions of the FCAA have been included in the AOP.

13.4 WAC 173-401-510(2)(h)(i) – Compliance Plan. A compliance plan has been included as section 4. of the AOP.

13.5 Order No. DE 78-186, Original Pathological Waste Incinerator – This Order permitted the operation of the original incinerator of pathological waste. The Order was issued on March 15, 1978. With the issuance of Order No. DE 98AQ-E124 for the new incinerator on August 7, 1998, and the closure of the original incinerator, this Order no longer contains any ongoing, applicable requirements that apply to the permittee.

13.6 Notice of Violation No. DE 89-E277 – On October 27, 1989, the permittee was issued Notice of Violation No. DE 89-E277 for opacity violations from coal fired boiler #5. Follow-up actions were taken by the permittee. All required actions have been completed and do not represent ongoing requirements. No changes to the AOP were made.

13.7 Notice of Violation No. DE 91-E107 – On April 15, 1991, the permittee was issued Notice of Violation No. DE 91-E107 for opacity violations from coal fired boiler #3. Follow-up actions were taken by the permittee. All required actions have been completed and do not represent ongoing requirements. No changes to the AOP were made.

13.8 Notice of Violation No. DE 93AQ-E110 – On March 19, 1993, the permittee was issued Notice of Violation No. DE 93AQ-E110 for particulate matter grain loading violations from coal fired boilers 3, 4, and 5. Follow-up actions were taken by the permittee. All required actions have been completed and do not represent ongoing requirements. No changes to the AOP were made.

13.9 Notice of Violation No. DE 97AQ-E143 – On October 1, 1997, the permittee was issued Notice of Violation No. DE 97AQ-E143 for opacity violations from the original pathological waste incinerator. Follow-up actions were taken by the permittee. All required actions have been completed and do not represent ongoing requirements. No changes to the AOP were made.

13.10 Administrative Order No. DE 97AQ-E157 – On November 24, 1997, the permittee was issued Administrative Order No. DE 97AQ-E157 regarding the installation of the new pathological waste incinerator. The actions outlined within this Order have been completed, and the new incinerator constructed. All required actions have been completed and do not represent ongoing requirements. No changes to the AOP were made.

13.11 Ecology Approved Emission Factors – Several Monitoring, Recordkeeping, and Reporting requirements require emissions calculations to be performed using emission factors that have been approved by Ecology. The determination as to whether emission factors are approvable is made in accordance with the guidance found in WAC 173-400-103(1), specifically that each emission factor must be a "published, verifiable emission factor that is applicable to the source." With regards to the emission factors utilized by the permittee, the emission factors included in the AOP renewal application have been found to be Ecology approvable. However, this does not preclude Ecology from requiring a modification in emission factors used as better information becomes available.

13.12 Condition 2.1.1 of AOP, Visible Emissions – WAC 173-400-040(1), (1)(a), and (1)(b) restrict visible emissions from all sources of air emissions throughout the source to 20% opacity for no longer than three (3) minutes in any one hour. While it is clear from the time periods contained within the regulation that Ecology Method 9A ("Source Test Manual – Procedures for Compliance Testing", State of Washington, Department of Ecology, 07/12/90) was the test method intended to be used to verify compliance, this permit has specified EPA Reference Method 9 as the test method utilized as part of MRRR **4M**. Ecology has determined that reasonable assurance of compliance with the regulation may be obtained by conducting RM 9 upon observance of visible emissions, as specified within **4M**.

13.13 Section 2.1 of AOP, Facility Wide – The requirements included under this section apply to all emission units facility wide with the exception of insignificant emission units as described under section 8.0 of this statement of basis. Emission unit specific requirements included in sections 2.2 through 2.13 of the AOP shall take precedence over requirements included in section 2.1 *with regard to monitoring, recordkeeping and reporting requirements*. For example, since the opacity of the exhaust from coal fired boiler #8 at the College Avenue Steam Plant is required to be continually monitored using a COMS, the permittee is not required to perform monthly visual emissions surveys as required by **4M**.

In addition, for emission units that have no emission unit specific requirements, the monitoring, recordkeeping and reporting (MRRR) required under section 2.1 of the AOP may be disregarded if appropriate. For example, since an ethylene oxide sterilizer is not a source of particulate matter, the MRR requirements associated with emission of particulate matter need not be performed for the sterilizer.

13.14 Sulfur content of "pipeline quality" natural gas – Reasonable assurance of compliance with requirements contained within the AOP limiting emissions of sulfur compounds (SO_2) is obtained through monitoring, recordkeeping, and reporting requirements that utilize published emission factors. Emission factors have been historically based on an assumption regarding the sulfur content of natural gas. The sulfur content in natural gas supplies has been recently found to be significantly higher than what was used to determine SO_2 limits in this permit. The need to amend the sulfur limits on permits is under review by Ecology.

13.15 Naming of Operational Parameters for the Incinerator – During the design and construction of the incinerator, the O&M manual and other manufacturer's information was developed using slightly different terminology to reference the relevant operational parameters than that included in the Notice of Construction permit. As of the issuance of this permit, the discrepancy has not led to amendment of the NOC permit, but may in the future. This note is added in order to provide clarification regarding the difference in terms.

13.16 Incinerator operational parameters, three-hour rolling average – Limitations on operational parameters for the incinerator are stated in terms of a three-hour rolling average by 40 CFR 60, Subpart Ec as well as the NOC permit. Calculations for compliance evaluation therefore cannot be performed until the incinerator has been operating for at least three hours in order to provide the data necessary to calculate the three-hour rolling average for each operational parameter.

13.17 Incinerator Operating Parameters Clarification – Order No. DE 98AQ-E124, the construction permit for the incinerator, outlines the required operational parameters that must be monitored to provide assurance of compliance with the emission limitations. The incinerator has emission control equipment that includes a venturi scrubber (for particulate matter removal) and a packed column spray tower (for removal of acid gases). The packed column spray tower is referred to as the "condenser" in the WSU operation and maintenance manual. Depending on the

interpretation of the wording within the Order, it could be read to require that liquor pH and pressure drop be monitored across both the venturi scrubber and the packed column spray tower.

The venturi scrubber removes particulate matter by accelerating the flue gas in the venturi throat, while water droplets are sprayed into the gas stream at a lower velocity. This causes the accelerated particles in the gas stream to combine with the water droplets through impaction due to the difference in velocity. The pressure drop is a vital operational parameter since this reflects the velocity difference between the particulate matter in the gas stream and the water droplets, and thus gives an indication of the efficiency of the venturi scrubber. The liquid pH is not an operational parameter that would indicate the efficiency of the venturi since the particulate matter removal mechanism (as described above) is not significantly affected by liquid pH. Accordingly, Ecology wished to clarify that, for the venturi scrubber, the pressure drop is an important operational parameter and must be monitored, while the liquid pH is not an important operational parameter and need not be monitored.

The packed column spray tower removes acid gases from the flue gas and collects the acidic compounds in the packed column liquid. The packed column relies on maximizing the liquid to gas contact by causing the flue gas to flow through the packing material countercurrent to the direction of the liquid flow. Acid gas removal using a packed column relies on the fact that many acid gases are soluble in water, and through the liquid/gas contact, the acid gases are absorbed into the liquid and thus removed from the flue gas. The removal mechanism relies heavily on the pH of the packed column liquid being basic (pH > 7) in order to facilitate removal of the acid gases. When the liquid is basic, the water solubility of the acid gases is maximized. The liquid pH is a vital operational parameter since the packed tower liquid must be basic in order to facilitate removal of the acid gases. The pressure drop across the packed tower is not an operational parameter that would indicate the efficiency of the packed tower since the acid gas removal mechanism (as described above) is not significantly affected by the pressure drop. Accordingly, Ecology wished to clarify that, for the packed column spray tower, the liquid pH is an important operational parameter and must be monitored, while the pressure drop across the packed column is not an important operational parameter and need not be monitored.

Additionally, Ecology wishes to clarify the following differences in terms between the AOP and underlying NOC permit issued by Ecology and the O&M manual and computer software used by WSU. The terms to be clarified are the operating parameters discussed under 20M in 2nd Revision of the AOP.

AOP and NOC	**WSU O&M Manual & Software**
"Maximum flue gas temperature just prior to exhausting to the atmosphere"	Venturi outlet/Flue gas temperature (°F)
"Minimum secondary combustion chamber temperature"	Secondary chamber temperature (°F)
"Minimum horsepower or amperage of the liquid pump"	Condenser/Venturi liquor pump amperage (amp)
"Minimum gas pressure drop across each of the wet scrubbers"	Venturi gas pressure drop (in. w.c.)
"Maximum gas temperature at the outlet of each of the wet scrubbers"	Condenser outlet gas temperature (°F)
"Minimum liquor flow rate to the inlet of each of the wet scrubbers"	Condenser/Venturi liquor flow rate (gpm)
"Minimum liquor pH at the inlet of each of the wet scrubbers"	Condenser liquor acidity (pH)

13.18 MRRR 7M and 8M of AOP – The correction for oxygen content as prescribed by 7M and 8M should be performed according to the method outlined in 40 CFR 60 Appendix A, Reference Method 19.

13.19 Grimes Way Steam Plant – The Grimes Way Steam Plant is a replacement for boilers 3, 4, 5, 6, 7, and 8 at the College Avenue Steam Plant located near the intersection of Tacoma Street and College Avenue. The Grimes Way Steam Plant will need to perform operational testing for a limited period of time, not to exceed six months. During this time, the existing boilers 3, 4, 5, 6, 7, and 8 at the College Avenue Steam Plant will remain operable in case of failure of the new equipment. At the conclusion of operational testing, the Grimes Way Steam Plant will begin normal operations and the existing boilers 3, 4, 5, 6, 7, and 8 at the College Avenue Steam Plant will be permanently taken out of service.

13.20 **MRRR 18M**, Operational Reliability – As defined in section 5.9 of the Additional Findings of Order No. 03AQER-5744, "Operational reliability is understood to mean that the equipment meets the performance criteria or specifications of the manufacturer; are integrated into an overall operating system; and achieves the full range of operational capabilities in steam and power production without failure or significant delay during an operational test period."

13.21 Condition 3.4 of Order No. 03AQER-5744 – In discussion with the NOC permit engineer, it was clarified that the intent of this condition is to require the permittee to use operational data from the Grimes Way Steam Plant emission units along with past testing results to estimate actual emissions over time periods, as well as to conduct visual emission monitoring in accordance with the requirements of the most recent AOP. There is an apparent conflict within the statement "Visible emission surveys shall be performed once per day as in the current WSU Air Operating Permit for Boilers No. 1 and No. 2." This condition shall be interpreted to mean that visible emission monitoring shall be conducted according to the requirements of the most recent AOP, not once per day.

13.22 BACT for RICE Generators at the Grimes Way Steam Plant – During the NOC permitting for the Grimes Way Steam Plant, the permittee elected to take operational limits on the three (3) RICE units in order to avoid installation of control technology that would reduce emissions of NO_X. This determination was made based primarily on economic impacts. The purpose of condition 2.8.15 of this AOP is to require that the BACT determination be reevaluated in the event that the permittee requests to increase any of the operational limits that apply to the RICE generators. The condition is meant to require that any new BACT evaluation be based on the total modified potential to emit from the unit(s), not just the increase in emissions resulting from the change in the operational limit.

13.23 Condition 6.4 of Order No. 03AQER-5744 – The referenced order contains two (2) conditions which are labeled 6.4. The second of these was so labeled as the result of a typographical error. The second condition 6.4 should have been 6.5.

13.24 Section 4 of AOP, Compliance Schedule – The following requirements have been met by the permittee as reported to Ecology; 40 CFR 60.53c(h)(1)-(h)(7, §53c(h)(10), §53c(b)(7), and §53c(b)(11). The compliance date applying to condition 2.1 of Order No. 01AQER-3336 and 40 CFR 60.8(a), both of which set timelines by which initial performance testing must be conducted on boilers #1 and #2 at the College Avenue Steam Plant has been extended due to exceptional circumstances preventing the boilers from achieving their maximum production rate.

13.25 Use of No. 1 Distillate Fuel at the Grimes Way Steam Plant – The NOC order approving the Grimes Way Steam Plant (Order No. 03AQER-5744) allows use of No. 2 distillate fuel. Ecology

wishes to clarify that this language was not intended to prohibit use of No. 1 distillate fuel in place of No. 2 at the Grimes Way Steam Plant.

13.26 Incinerator Records Collection – Condition 20M 2) c) of the AOP incorporates the recordkeeping requirement originating from 40 CFR 60.58c(b)(3). The requirement specifies that records be kept which document "calendar days" for which required data has not been collected. The permittee has requested that Ecology clarify whether the records must identify the actual hours and times of the recordkeeping lapses or simply the whole day. Ecology's view is that the CFR requirement is simply to identify the calendar days when said recordkeeping lapses occur. However, if the records do not identify the specific duration and time of the lapses, it will be assumed that the lapse occurred for the duration of the day identified.

13.27 Incinerator Operating Parameter Reporting – Condition 20M 3) c) ii) requires reporting of the highest and lowest values for incinerator operating parameters. The permittee has requested that Ecology clarify the averaging time for these highest and lowest values. Ecology's view is that the permittee should report values in terms of the frequency that they are recorded, as required under condition 20M 1) b). For example, since waste charge rate must be recorded once per hour, the permittee should report the highest and lowest one hour charge rate.

13.28 Incinerator Emergency and Bypass Stack Reporting – Condition 20M 3) c) v) and viii) require that the permittee report the nature and details of any emergency pertaining to the incinerator as well as any instance when the bypass stack is used. The permittee has requested that Ecology clarify whether these conditions apply only during normal operations or include startup, shutdown, and emergency conditions. Ecology's view is that these requirements apply at all times. The pertinent information should be reported within the monthly deviation reports as required by 20M 3) c) xvi).

13.29 T-BACT for the Grimes Way Steam Plant – At the request of the permittee, the purpose of this note is to clarify that condition 2.8.17 of the AOP does not require emission testing for any TAP's not specifically cited within the testing requirements for the plant. This condition simply establishes the control equipment and procedures that have been established as T-BACT for various pollutants and pollutant groups.

14.0 Appendix A – University Map